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10/573,286	12/19/2006	Patrick John Volpe	0069518-000003	5428

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EXAMINER

ALLEN, CAMERON J

ART UNIT	PAPER NUMBER
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1797

NOTIFICATION DATE	DELIVERY MODE
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ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/573,286	Applicant(s) VOLPE, PATRICK JOHN	
	Examiner CAMERON J. ALLEN	Art Unit 1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 March 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 and 43-46 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-29 and 43-46 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>3/27/2009</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

Applicant's arguments with respect to claims 1-42 have been considered but are moot in view of the new ground(s) of rejection. The Examiner notes claims 30-42 are cancelled and claims 43-46 are added.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 43-46 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claims contain the negative limitation "wherein no chemicals are added to the wastewater" and also "wherein no additional separating device". The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Any negative limitation or exclusionary proviso must have basis in the original disclosure. The mere absence of a positive recitation is not basis for an exclusion. Any claim containing a negative limitation which does not have basis in the original disclosure should be rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. Note that a lack of literal basis in the specification for a negative limitation may not be sufficient to establish a prima facie

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case for lack of descriptive support. Ex parte Parks, 30 USPQ2d 1234, 1236 (Bd. Pat. App. & Inter. 1993). See MPEP § 2163 - § 2163.07(b) for a discussion of the written description requirement of 35 U.S.C. 112, first paragraph.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1, 6-9, 20 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gallot WO 2004/056711 A1 in view of Arnaud US 5,647,977.

Regarding claim 1, Gallot discloses a method of purifying wastewater that comprises the steps of:

(i) passing the wastewater through an electrocoagulation cell which comprises a plurality of reaction plates or electrodes disposed within said cell and spaced apart from each other whereby said wastewater is treated

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by passing an electric current through the wastewater to thereby produce purified water; (Abstract)

(iii) recycling the wastewater back to the electrocoagulation cell. (Abstract) but does not disclose using said purified water for cleaning vehicles in a vehicle wash facility.

The Arnaud reference does disclose a method of purifying water for re-use in cleaning vehicles. (Column 2 lines 16-25)

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of Gallot with the method of Arnaud by reusing the water to clean vehicles, since it would yield the added benefit of providing water for cleaning.

Regarding claim 6, Gallot in view Araund discloses the method of claim 1 wherein the electrocoagulation cell is orientated vertically (Gallot Fig 3) but does not disclose that an outlet conduit is located at the top of the electrocoagulation cell and an inlet conduit is located at the bottom of the electrocoagulation cell. It would have been obvious to one of ordinary skill in the art at the time of the invention to orient an outlet conduit at the top of the electrocoagulation cell and an inlet conduit at the bottom of the electrocoagulation cell, since it has been held that mere rearrangement of parts is within the ordinary skill of one in the art.

Regarding claim 7, Gallot in view Araund discloses the method of claim 1 but does not disclose wherein the voltage applied to the electrodes falls within the range 10-110 volts. It would have been obvious to one of ordinary skill in the art at the time of the invention to use a range of 10-110 volts, since it has been held that where the general condition exists in the prior art, it is within the ordinary skill of one in the art at

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the time of the invention to discover or find the optimum or workable range.

Regarding claim 8, Gallot in view Araund discloses the method of claim 7 but does not disclose wherein the voltage applied to the electrodes falls within the range 20-80 volts. It would have been obvious to one of ordinary skill in the art at the time of the invention to use a range of 20-80 volts, since it has been held that where the general condition exists in the prior art, it is within the ordinary skill of one in the art at the time of the invention to discover or find the optimum or workable range.

Regarding claim 9, Gallot in view Araund discloses the method of claim 7 but does not wherein the voltage applied to the electrodes falls within the range 20-60 volts. It would have been obvious to one of ordinary skill in the art at the time of the invention to use a range of 20-60 volts, since it has been held that where the general condition exists in the prior art, it is within the ordinary skill of one in the art at the time of the invention to discover or find the optimum or workable range.

Regarding claim 20, Gallot in view Araund discloses the method of claim 1 wherein the purified wastewater is discharged into one or a plurality of settling tanks for separation of contaminated floc, if present, from the purified wastewater. (Gallot abstract settling chamber D)

Regarding claim 29, Gallot in view Araund discloses the method of claim 1 wherein prior to step (i) the wastewater may be obtained from public or household showers, sinks, basins, baths, washing machines, dishwashers, kitchens or car washes and may be initially stored in a collection tank or sump. (Araund Abstract)

Claims 2, 3, 5, 10, 11, 12, 15-19 22 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gallot in view of Arnaud as applied above in claim 1 in further view of Itzhak US 6,733,654.

Regarding claim 2, Gallot in view Araund discloses the method of claim 2 but does not disclose wherein the wastewater is filtered prior to step (i) to remove large particles, if present, from the wastewater. Itzhak does disclose the use of a filter prior to passing it through the cell. (Column 4 lines 9-11) It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of Gallot in view of Araund with the filter in the Itzhak reference, since it would provide the expected result and increased benefit of increased filtration.

Regarding claim 3, Gallot in view Araund in further view of Itzhak discloses the method of claim 2 but does not disclose wherein particles with a size greater than 200 μm are removed. It would have been obvious to one of ordinary skill in the art at the time of the invention to choose a filter that filters particles with a size greater than 200 μm , since using the filter would yield the expected result of increased filtration.

Regarding claim 5, Gallot in view Araund discloses the method of claim 1 but does not disclose wherein direct current is applied to the reaction plates or electrodes of the electrocoagulation cell. The Itzhak reference does disclose wherein direct current is applied to the reaction plates or electrodes of the electrocoagulation cell. (Claim 4) It would have been obvious to one of ordinary skill in the art to modify the Gallot in view of Araund reference with the power source in the Itzhak reference, since the Itzhak reference discloses it is an effective and would yield the expected result and added

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benefit of providing power.

Regarding claim 10, Gallot in view Araund discloses the method of claim 1 but does not disclose wherein the current applied to the reaction plates or electrodes falls within the range 2-100 amps. The Itzhak reference does disclose wherein the current applied to the reaction plates or electrodes falls within the range 2-100 amps. (Column 5 line 26) It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the Gallot in view of Araund reference by using a range of 2-100 amps, since the Itzhak discloses it to be effective and it is within the level of ordinary skill of one in the art to use ranges known to be effective to achieve the expected result of water treatment.

Regarding claim 11, Gallot in view Araund discloses the method of claim 10 but does not disclose wherein the current applied to the reaction plates or electrodes falls within the range 5-60 amps. It would have been obvious to one of ordinary skill in the art at the time of the invention to use a range of 5-60 amps, since it has been held that where the general condition exists in the prior art, it is within the ordinary skill of one in the art at the time of the invention to discover or find the optimum or workable range.

Regarding claim 12, Gallot in view Araund discloses the method of claim 10 but does not disclose wherein the current applied to the reaction plates or electrodes falls within the range 5-20 amps. It would have been obvious to one of ordinary skill in the art at the time of the invention to use a range of 5-20 amps, since it has been held that where the general condition exists in the prior art, it is within the level of ordinary skill of

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one in the art at the time of the invention to discover or find the optimum or workable range.

Regarding claim 15, Gallot in view Araund discloses the method of claim 1 but does not disclose wherein 2 to 75 electrodes are used in the cell. The Itzhak reference does disclose wherein 2 to 75 electrodes are used in the cell (Column 5 lines 24-25) It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the Gallot in view of Araund reference by using 2 to 75 electrodes, since the Itzhak discloses it to be effective and it is within the ordinary skill of one in the art to use configurations known to be effective to achieve the expected result of water treatment.

Regarding claim 16, Gallot in view Araund in further view of Itzhak discloses the method of claim 15 wherein 2 to 26 of the electrodes are connected to the power supply. (Itzhak Column 4 line 64)(Column 5 lines 24-25)

Regarding claim 17, Gallot in view Araund discloses the method of claim 1 but does not disclose wherein the flow rate of wastewater through the electrocoagulation cell falls within the range 2-1000 L/min. The Itzhak reference does disclose wherein the flow rate of wastewater through the electrocoagulation cell falls within the range 2-1000 L/min. (Itzhak Column 4 line 8) It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the Gallot in view Araund references with the flow rate of the Itzhak reference since it would yield the expected result of water treatment.

Regarding claim 18, Gallot in view Araund in further view of Itzhak discloses the method of claim 17 but does not disclose wherein the flow rate falls within the range 5-

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200 L/min. It would have been obvious to one of ordinary skill in the art at the time of the invention to use a range of 5-200 L/min, since it has been held that where the general condition exists in the prior art, it is within the ordinary skill of one in the art at the time of the invention to discover or find the optimum or workable range.

Regarding claim 19, Gallot in view Araund in further view of Itzhak discloses the method of claim 17 does not disclose wherein the flow rate falls within the range 10-50 L/min. It would have been obvious to one of ordinary skill in the art at the time of the invention to use a range of 5-200 L/min, since it has been held that where the general condition exists in the prior art, it is within the ordinary skill of one in the art at the time of the invention to discover or find the optimum or workable range.

Regarding claim 22, Gallot in view Araund discloses the method of claim 1 but does not disclose wherein the purified wastewater is filtered prior to re-use. The Itzhak reference does disclose the use of a filter. (Itzhak Filter 8 figure 1) It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of Gallot in view of Araund with the filter in the Itzhak reference, since it would provide the expected result and increased benefit of increased filtration.

Regarding claim 23, Gallot in view Araund in view of Itzhak discloses the method of claim 22 wherein particles with a size greater than 10 μm are removed. (Itzhak Column 5 line 27-28) The Examiner interprets the sand filter to filter in the range of 10-infinity μm . The Examiner interprets greater than 10 μm to be open ended.

Claims 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gallot in view Araund as applied above in claim 1 in further view of Matu JP 11-

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123383.

Regarding claim 13, Gallot in view Araund discloses the method of claim 1 but does not disclose wherein the electrodes are manufactured from a metal selected from the group consisting of aluminum, steel, iron, titanium, silver and brass. The Matu reference JP 11-123383 does disclose the use of an aluminum and steel electrode cell. (0031 and 0033) It would have been obvious to one of ordinary skill in the art at the time of the invention use an aluminum electrode, since the Matu reference discloses that it would yield the added benefit of increasing the diameter of a suspended solid and generate an aggregate that can more easily be filtered.

Regarding claim 14, Gallot in view Araund in view of Matu discloses the method of claim 13 wherein the electrodes are manufactured from aluminum or titanium. (Matu 0031 and 0033)

Claims 24-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gallot in view Araund as applied above in claim 1 in further view of Ferguson US 5,021,250.

Regarding claim 24, Gallot in view Araund discloses the method of claim 1 but does not disclose wherein the purified water is stored in a storage tank before re-use. Ferguson US 5,021,250 does disclose the use of a storage tank in water treatment. (Column 5 lines 1-6) It would have been obvious to one of ordinary skill in the art at the time of the invention to use the storage tank in Ferguson, since it would provide the added benefit of storage.

Regarding claim 25, Gallot in view Araund discloses the method of claim 1 but

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does not disclose wherein the purified water is stored in a sump after re-use. Ferguson does disclose the use of a sump. (Column 6 lines 58-59) It would have been obvious to one of ordinary skill in the art at the time of the invention to use the sump in Ferguson, since it would provide the added benefit of storage.

Regarding claim 26, Gallot in view Araund discloses the method of claim 1 but does not disclose wherein after step (i) the wastewater is passed through a reverse osmosis system. Ferguson does disclose the use of a reverse osmosis system. (Claim 32) It would have been obvious to one of ordinary skill in the art at the time of the invention to use the osmosis system in Ferguson, since it would yield the added benefit of increased filtration.

Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gallot in view Araund, in further view of Smith 5,620,594.

Regarding claim 21, Gallot in view Araund discloses the method of claim 20 but does not disclose wherein the settling tanks are connected to a rainwater collection tank to allow collected rainwater to be discharged into the settling tanks to increase the volume of water available for recycling. Smith does disclose the collection of rain water in a tank for later use. It would have been obvious to one of ordinary skill in the art at the time of the invention to use the collection tanks of Smith for rain water collection, since the tanks would provide the added benefit of collecting additional water for collection. (Smith figure 2 #16)(Column 2 line 20-24)

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CAMERON J. ALLEN whose telephone number is (571)270-3164. The examiner can normally be reached on M-Th 9-7pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Walter Griffin can be reached on 571-272-1447. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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CJA

/Walter D. Griffin/
Supervisory Patent Examiner, Art Unit 1797